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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Eik Bezzel

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EXAMINER

OLSEN, KAJ K

ART UNIT

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1795

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/517,424	Applicant(s) BEZZEL ET AL.	
	Examiner KAJ K. OLSEN	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 February 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/2/2009 has been entered.

Specification

2. The disclosure is objected to because of the following informalities: Page 1 of the specification presented to the office has a clipped right-side margin that cuts off the words on the end of each line. The examiner has included a copy of the first page as an office action appendix so the applicant can see what the specification presented to the office currently looks like. This is clearly unacceptable and the examiner recommends the applicant either provide an amended page 1 or provide a substitute specification correcting the problem.

3. Applicant's brief description of the drawings should refer to each figure and subfigure individually. For example, "fig. 1a-c" of p. 9 should be amended to --fig. 1a, 1b, and 1c-- so that every figure and subfigure is separately listed. The description of figures 2 and 5-8 would also require similar amendment.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. In the previous office actions, the previous examiner rejected the applicant's various use of relative language (i.e. "sufficiently", "essentially", etc.). This examiner is withdrawing most of those previous rejections. However, this examiner finds the limitation "substantially invisible to the naked eye, at least when viewed in a predetermined range" to still be indefinite. In the specification, applicant even admits that whether someone views an object's visibility is a function of how far away that someone is from the object being viewed (p. 13, ll. 2-10). Hence whether or not something is invisible entirely depends on how far the individual is away from the optical element. If someone were standing right next to it (i.e. centimeters away), the non-transparent areas would presumably have to be of a micron size range. If someone were standing 30 meters away from it, they probably couldn't perceive of the non-transparent object regardless of the areas of the non-transparent portion. Hence, in the absence of a recited distance in question ("predetermined range" could be anything), the scope of this limitation is entirely unclear. Moreover, because everyone's vision is different and the ability to perceive of an object will vary from person to person, the scope of this claim is thereby further unclear. Moreover, the examiner would presume that the particular color of the non-transparent area would also change the perception of the material. For example, a non-transparent material that is the same color as

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the material on the other side of the transparent material would be far less visible than a non-transparent material having a vastly different color. Finally, even disregarding the issue of whether something is invisible or not, the final modification the concept of invisibility with the term “substantially” renders the claim scope even further unclear. If something is not completely invisible (i.e. substantially invisible), then it would be visible. One can either perceive of the presence of the non-transparent area or they cannot. What the scope of being “substantially invisible” would be is entirely unclear to the examiner. Claim 1 is drawn to a device and device claims should be defined based on what the device is and not how one would perceive of the device.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-14 and 16-19 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Walker et al (USP 6,892,011). Walker is being cited and relied on for the first time with this office action.

9. Walker discloses an optical element comprising both transparent and non-transparent areas wherein the transparent areas (72, 73) and non-transparent areas 71 are arranged in a manner analogous to the present invention. See col. 12, l. 56 - col. 13, l. 16 and compare fig. 7a-

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7c and 15 of Walker with fig. 1a-1c of the present invention. With respect to the transparent areas being substantially invisible to the naked eye, as the examiner discussed above, the scope of this limitation is entirely unclear and this limitation cannot be utilized to further structurally define the optical element. In addition, because the optical element of Walker is constructed to substantially of transparent material (i.e. the area of 72 and 73 exceeds the area of 71 (fig. 7a-7c) and the individual fibers drawn down to micron dimensions (col. 16, ll. 22-34), the non-transparent material of Walker would presumably be at least substantially invisible to the naked eye. The non-transparent and transparent areas are arranged close to each other (fig. 15) and extend at right angles to the transparent face (see element 47 of fig. 21 for example). With respect to the optical element having a depth/width ratio that would allow light of a particular angle to pass through, this would be inherent for a structure such as Walker in view of its similarity in structure to that of the present invention. Moreover, see col. 20, ll. 31-53. Walker further shows that the non-transparent areas have openings that are filled with non-transparent areas (fig. 7a-7c) and that the non-transparent and transparent areas are located in the same plane. With respect to the optical element comprising a structure for forms at least a part of a solar cell, the claim are drawn to just an optical element and not a solar cell. Whether or not this optical element is further incorporated into a solar cell thereby constitutes the intended use of the optical element and doesn't further define the actual optical element.

10. With respect to the openings being elongated, transparent fibers 73 and transparent cladding 72 of fig. 7b are in an elongated opening of non-transparent 71. Alternatively, Walker recognized that the fibers utilized could be any number of shapes (col. 16, ll. 23-34) and it would have been obvious to one of ordinary skill in the art at the time the invention was being made to

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utilize elongated fibers as a change in shape or form is generally recognized as being within the level of ordinary skill in the art. *In re Dailey*, 149 USPQ 47 (CCPA 1976). The use of elongated fibers would have resulted in an opening for the non-transparent material that is elongated as well.

11. With respect to either the transparent areas or non-transparent areas *appearing* as islands, devices should be defined in the claims based on what the device is and not how it *appears*.

However, even giving these claim limitations further due consideration, in fig. 7c and 15, the transparent portions (72, 73) are islands in the non-transparent area 71 while the embodiment of fig. 7b would result in non-transparent element 71 would be appear as a line island surrounded by transparent portions 72 and 73.

12. With respect to the transparent areas have an extent that is maximum ten times the extent of the non-transparent area at a right angle to the face, the examiner is interpreting “maximum ten times” as being ten or less. Because the fibers of Walker extend only microns along the face (col. 16, ll. 50-52) while the thickness of the optical element Walker teaches the use of plates that are 26 mm thick (Table 3 in col. 23) which defines a direction at a right angle to the face, this is ten times or less. Alternatively, the embodiment of fig. 7B could be constructed into arrays that have a length of at least 25 cm in length with a 26 mm thickness (Table 3 in col. 23). This would result in an extend of transparent material (72, 73) that overlaps the 10 times the thickness of the device.

13. With respect to the non-transparent material comprising semiconductor or metallic particulate material, Walker set forth no criticality for the choice of opaque material utilized for the device (col. 13, ll. 7-16). It would have been obvious to one of ordinary skill in the art at the

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time the invention was being made to utilize other opaque materials, such as the broadly defined semiconductor or metallic particles, for the opaque material of Walker because the substitution of one known material for another would have required only routine skill in the art.

14. With respect to the optical element being configured as a film, see the embodiments of fig. 19 and 21-23 where the optical element is in film form. With respect to this being attached to the surface of another optical element, that only defines the use of the device and the use of the device does not further define the structure of the device. Moreover, Walker does disclose this optical element being attached to other optical elements in the above cited figures.

15. With respect to the non-transparent portion configured to function as an electrode for a solar cell, claim 16 defines that said electrode could comprise an electrically conductive particulate material. Walker teaches the use of conductive material carbon black in the non-transparent portion (col. 19, ll. 56-61). Hence, presumably the non-transparent portion of Walker could function as an electrode for a solar cell. Whether or not Walker teaches the use of the non-transparent material as an electrode does not further define the set forth optical element. Furthermore, the particular composition of the solar cell also does not further define the actual claimed optical element either.

16. With respect to the use of a transparent substrate, the optical element of Walker is attached to a transparent diffuser 44 in the embodiment of fig. 19. See col. 20, ll. 9-15.

Allowable Subject Matter

17. Claims 15 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

18. The following is a statement of reasons for the indication of allowable subject matter: The prior art does not disclose nor render obvious all the cumulative limitations of claims 1, 13, 14, and 15 with particular attention to the use of a semiconductor having a dye absorbed thereon which would be capable of functioning as a photo-electrode.

Response to Arguments

19. Applicant's arguments with respect to claims 1-19 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Although the examiner has taken the position above that utilizing the optical element as part of a solar cell does not further define the actual optical element but merely recites what the optical element is to be utilized with, the examiner notes that the use of fiber optic based light guides, such as those of Walker, find utility in the solar cell art as well. See Swet (USP 3,780,722) and Rosenberg (USP 5,877,874). The examiner also cites Wadsworth (USP 693,088) and Salmi (US 2003/0175625), both of which appear to show optical elements that would be relevant towards the claimed subject matter as well.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to KAJ K. OLSEN whose telephone number is (571)272-1344. The examiner can normally be reached on M-F 5:30-2:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X. Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kaj K Olsen/
Primary Examiner, Art Unit 1795
April 6, 2009